

L4 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2004:798693 CAPLUS  
 DN 141:297793  
 ED Entered STN: 30 Sep 2004  
 TI Photochromic materials with visible colors as component colors, their  
 manufacture, and electrodeposition color boards  
 IN Nakayama, Shinichi; Yoshida, Tetsuya; Okuda, Yuka; Kadota, Yuko; Watanabe,  
 Junji  
 PA Soken Chemical and Engineering Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 15 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C25D013-00  
 ICS C25D013-02; C25D013-06; G02B005-18  
 CC 47-9 (Apparatus and Plant Equipment)

FAN.CNT 1  

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004269922	A	20040930	JP 2003-59210	20030305 <--
	JP 3995242	B2	20071024		
PRAI	JP 2003-59210		20030305 <--		

CLASS  

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004269922	ICM	C25D013-00
	ICS	C25D013-02; C25D013-06; G02B005-18
	IPCI	C25D0013-00 [I,A]; C25D0013-02 [I,A]; C25D0013-06 [I,A]; C25D0013-04 [I,C*]; B32B0015-16 [I,A]; G02B0005-18 [I,A]
	IPCR	C25D0013-00 [I,A]; C25D0013-00 [I,C*]; C25D0013-02 [I,A]; C25D0013-02 [I,C*]; C25D0013-04 [I,C*]; C25D0013-06 [I,A]; G02B0005-18 [I,A]; G02B0005-18 [I,C*]; B32B0015-16 [I,C]; B32B0015-16 [I,A]
	FTERM	2H049/AA06; 2H049/AA31; 2H049/AA41; 2H049/AA60

AB The title materials are composed of fine black spherical organic polymer or inorg. particles having a volume-average particle size of 100-500 nm, and arranged regularly.  
 ST photochromic material manuf electrodeposition color board  
 IT Photochromic materials  
 (photochromic materials with visible colors as component colors, their manufacture, and electrodeposition color boards)

L4 ANSWER 2 OF 3 WPIX COPYRIGHT 2008 THOMSON REUTERS on STN  
 AN 2004-711744 [70] WPIX  
 DNC C2004-251328 [70]  
 DNN N2004-564282 [70]  
 TI Light color development material for color board, comprises organic polymer ball-shaped microparticles having preset average particle diameter and containing black type color chosen from gray, dark brown, and black devoid of color  
 DC A14; A85; M11; P81; X25  
 IN NAKAYAMA S; OKUDA Y; TSUNODA Y; WATANABE J; YOSHIDA T  
 PA (SOKO-N) SOKEN KAGAKU KK  
 CYC 1  
 PI JP 2004269922 A 20040930 (200470)\* JA 15[3]  
 JP 3995242 B2 20071024 (200771) JA 14  
 ADT JP 2004269922 A JP 2003-59210 20030305; JP 3995242 B2 JP 2003-59210 20030305  
 FDT JP 3995242 B2 Previous Publ JP 2004269922 A  
 PRAI JP 2003-59210 20030305  
 IPCI B32B0015-16 [I,A]; B32B0015-16 [I,C]; C25D0013-00 [I,A]; C25D0013-00 [I,C]; C25D0013-02 [I,A]; C25D0013-02 [I,C]; C25D0013-04 [I,C];

C25D0013-06 [I,A]  
 IPCR C25D0013-00 [I,A]; C25D0013-00 [I,C]; C25D0013-02 [I,A]; C25D0013-02 [I,C]; C25D0013-04 [I,C]; C25D0013-06 [I,A]; G02B0005-18 [I,C]  
 FCL B32B0015-16; C25D0013-00 H; C25D0013-02 Z; C25D0013-06; C25D0013-06 Z; G02B0005-18  
 PTRM 2H049; 2H249; 4F100; 4K025; 2H049/AA06; 2H049/AA31; 2H049/AA41; 2H049/AA60  
 AB JP 2004269922 A UPAB: 20050707

NOVELTY - The light color development material comprises organic polymer ball-shaped microparticles with average particle diameter of 100-500 nm, and containing black type color chosen from gray, dark brown, and black devoid of color. Particle-form structure surface is formed by irradiating microparticles with natural light, and exhibits chromatic light color by adjusting microparticles along length and horizontal direction.

DETAILED DESCRIPTION - The light color development material comprises organic polymer ball-shaped microparticles having average particle diameter of 100-500 nm, and containing black type achromatic color chosen from gray, dark brown, and black devoid of color. The particle-form structure surface is formed by irradiating spherical organic polymer microparticles with natural light (sunlight) visible light, and exhibits chromatic light color by adjusting microparticles along length and horizontal direction. Perpendicular reflected light color is exhibited as a chromatic light color clear as structure color. INDEPENDENT CLAIMS are included for the following:

(a) manufacture light color development material; and  
 (b) manufacture of electrodeposition color board.

USE - For electrodeposition color board, (claimed) such as steel sheet.

ADVANTAGE - The light color development material is easily manufactured by electrophoresis, and has industrial utility.

MC CPI: A08-E01; A11-B05A; A12-B01; M11-G01  
 EPI: X25-R04

L4 ANSWER 3 OF 3 JAPIO (C) 2008 JPO on STN  
 AN 2004-269922 JAPIO  
 TI PHOTOCHROMOPHORIC MEMBER PRESENTING VISIBLE CHROMATIC COLOR AS STRUCTURAL COLOR, MANUFACTURING METHOD THEREFOR, AND PROCESS FOR MANUFACTURING ELECTRODEPOSITED COLOR SHEET USING THE METHOD  
 IN NAKAYAMA SHINICHI; YOSHIDA TETSUYA; OKUDA YUKA; TSUNODA YUKO; WATANABE JUNJI  
 PA SOKEN CHEM & ENG CO LTD  
 PI JP 2004269922 A 20040930 Heisei  
 AI JP 2003-59210 (JP2003059210 Heisei) 20030305  
 PRAI JP 2003-5921020030305  
 SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2004  
 IC ICM C25D013-00  
 ICS C25D013-02; C25D013-06; G02B005-18  
 AB PROBLEM TO BE SOLVED: To provide a photochromophoric member that is constituted by monodispersed particles of an organic or inorganic polymer which is not colored with a dye or pigment having a chromatic color, and presents a chromatic color such as red (R), blue (B), green (G) and yellow (Y) as a structural color, when a perpendicularly reflected light from an incident visible light is visually appreciated.  
 SOLUTION: The photochromophoric member presents a chromatic color having a chroma saturation of at least 3 or more expressed by Munsell color indicator as a structural color, when a perpendicularly reflected light from an incident light having wavelengths in a range of the visible light of sunlight (or white light) onto the surface formed of the monodispersed spherical particles of the organic or inorganic polymer, is visually appreciated, wherein the spherical particles of the organic or inorganic polymer are a black-based achromatic color monodispersed particles, and have a particular particle sizes of which the average particle diameter expressed by volume base is in a range of 100 to 500 nm, and the black-based achromatic color monodispersed spherical particles align

regularly toward longitudinal and transverse directions to form a  
multilayer.  
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